

Title: Package for products and method for packaging products.

The invention relates to a package for products. In particular, the invention relates to a package for company and consumer products such as electronic products, for instance telephones, dictaphones, drives, network parts and the like.

5 As a rule, such products were packaged in a cardboard outer package in which different inner packages can be provided also from, for instance, cardboard. The product itself, booklets such as instructions for use and certificates of guarantee, batteries, battery chargers, cords and the like were packaged separately and packaged in the inner space of the outer  
10 package. This was a laborious manner of packaging, expensive and little environmentally friendly due to the large amount of packaging material. Moreover, as a result, the product was not presented in an attractive manner.

It has already been suggested to solve a number of these problems by manufacturing a dish-shaped inner package, vacuum formed from plastic or  
15 made of paper pulp, in which the product can be laid with a number of accessories. This dish-shaped inner package has a lower longitudinal edge on which it can rest on the bottom of the outer package. With such a package, the inner package is formed either so low that associated booklets, CD-ROMs, cords and the like can be placed thereon, or so high that these accessories can  
20 be packaged below the inner package within this longitudinal edge. In the first case, the drawback arises that the product is still not visible in an attractive manner, while in the latter case the inner package is to be particularly high, so that the molds required thereto will be complicated, relatively much material is required, the production cycles will take a long time and a relatively instable  
25 inner package will be obtained.

The object of the invention is a package of the type described in the opening paragraph, comprising an inner and an outer package while at least a

number of the drawbacks of the known packages are avoided while the advantages thereof are maintained.

A package according to the invention is characterized by the features of claim 1.

5           With a package according to the invention, an outer package is used which is, for instance, rectangular and box-shaped and defines an inner space. The outer package is provided, in the inner space, with bearing parts folded therein, on which the inner package can be borne. To that end, the inner package can be of dish-shaped design, provided with a longitudinal edge,  
10   which longitudinal edge can rest on the bearing parts mentioned.

          The bearing parts are folded in the inner space, preferably as flaps of a blank from which the outer package has been set up. These bearing parts have a height and position such that the inner package is held at a distance from the bottom of the outer package, so that space is created thereunder for  
15   accessories such as booklets, charger, cords, CD, battery and the like. The product to be packaged such as a (mobile) phone, computer part such as a drive, network parts such as hubs or the like can be laid in the inner package at the side remote from the bottom, so that this product is presented in an attractive fashion and, moreover, is screened off well.

20           To that end, in an advantageous embodiment, in the inner package, which is preferably of dish-shaped design, a receiving cavity for the or each product is provided, in which the product can be laid while, preferably, the package is provided with a cover which, in closed position, lies relatively closely on the top side of the inner package thereby confining the product in  
25   the product cavity.

          Preferably, the inner and outer package are manufactured from recyclable materials, in particular materials that can be included in a waste paper stream for recycling. Preferably, then, the outer package is from cardboard, in particular solid or corrugated cardboard, while the inner package  
30   is preferably manufactured separately from a starch-based product, more in

particular a somewhat foamed material such as Paperfoam®, Barneveld, the Netherlands. Such a material is described in, for instance, PCT/NL96/00136 and PCT/NL96/00337 incorporated herein by reference.

5 Preferably, an inner package according to the invention is dish-shaped with a structure such that a form cavity and a longitudinal edge are provided such that the bottom side of the form cavity is virtually in one plane with the longitudinal edge so that when the inner package is laid on a flat surface, the longitudinal edge and the form cavity can be supported by the surface without the inner package becoming damaged.

10 The invention further relates to a blank, suitable and intended for forming an outer package for a package according to the invention.

Furthermore, the invention relates to a method for packaging products, characterized by the features of claim 8.

15 With such a method, in a rapid and simple manner, relatively inexpensive packages can be manufactured for products or having products therein, which require little space for storage prior to use, offer a good protection and, moreover, present a product to be packaged in an attractive manner.

20 In the further subclaims, further advantageous embodiments of the invention are described. In clarification of the invention, exemplary embodiments thereof will be described with reference to the drawing. In the drawing:

Fig. 1 shows, in perspective view, an opened outer package according to the invention;

25 Fig. 2 shows, in top-plan view, an outer package according to the invention, in opened condition, with the inner package taken out;

Fig. 3 shows, in top plan view, an outer package according to the invention, in opened condition, with an inner package placed therein;

Fig. 4 shows, in cross-sectional side view along the line IV-IV in fig. 3, a package according to the invention, in opened condition, with a product and accessories to be packaged therein; and

Fig. 5 shows a blank for an outer package for a package according to the invention.

These embodiments shown should not be construed to be limitative in any manner. In this description, identical or corresponding parts have identical or corresponding reference numerals.

Fig. 1 schematically shows, in perspective view, an outer package 1 for a package 100 according to the invention, folded from a cardboard blank 101 as will be described with reference to Fig. 5. This outer package 1 comprises a rectangular bottom 2 with a length L and width B and two pairs of sidewalls 3, 4 connected to the bottom via first folding lines 5. The bottom 2 and the sidewalls 3, 4 define an inner space 6. On one of the large sides of the outer package 1, a sidewall 3 is connected to a cover 7, connected thereto via a fourth folding line 8 parallel to the respective first folding line 5. On the small sides of the outer package 1, each sidewall 4 is designed so as to be double such that they can be folded over enclosing flaps 9 connected to the large sidewalls 3 and are fitted in the bottom 2. To that end, the sidewalls 4 comprise an outer sidewall flap 10, connected to the bottom 2 via the first folding line 5, and an inner sidewall flap 11, connected to the outer sidewall flap 10 by a second folding line 12, of double design, parallel to the respective first folding line 5. The second folding line comprises two parallel folding lines interspaced at a distance approximately equal to the thickness of the cardboard of the blank.

On two opposite sides, each inner sidewall flap 11 is provided with a bearing flap 13 connected to the respective inner sidewall flap 11 by a third folding line 14 which, in the embodiment shown, is approximately at right angles to the first folding lines 5. Each bearing flap 13 has a height H1 which is smaller than the height H0 of the inner space 6 (Fig. 4), while, when the package 100 is set up, the edge 15 of the inner sidewall flap 11 facing the

bottom 2 and the bearing flaps 13 are approximately flush, and rest on the bottom. The edge 15 of the inner sidewall flap 11 is provided with a projection 16 that fits in a recess 17 in the bottom 2, adjacent the respective first folding line 5.

5           The distance B1 between the parallel third folding lines 14 is smaller than the width B of the bottom 2, while the bearing flaps 13 have a length Ld which is selected such that the total distance B2 between the free longitudinal edges 18 of the two bearing flaps 13 of each sidewall 4 is greater than the width B of the bottom 2.

10           As clearly appears from Figs. 1 and 2, with the outer package 1 set up, the bearing flaps 13 extend in the inner space 6, while the free longitudinal edges 18 thereof abut against the inside of the large longitudinal walls 3. The bearing flaps 13 include an angle  $\alpha$  with said sidewalls 3, for instance an angle between 20 and 70°, more in particular approximately 45°. The topside 19 of  
15 the bearing flaps 13 is then at a distance H3 of the top edge 20 of each of the sidewalls 3, 4.

          The cover 7 is provided with a cover surface 21, a cover end surface 22 connected thereto via a fifth folding line 23 and provided with two insert flaps 24 which, when the package 100 is closed, can be inserted along the  
20 enclosing flaps 9 between the inner and outer sidewall flaps 10, 11. The cover surface 21 is further provided with two dust flaps 25 that can be inserted along the inner sidewall flaps 11.

          As clearly appears from Figs. 3 and 4, a dish-shaped inner package 102 can be placed in the inner space 6 of the outer package 1, which inner  
25 package 102 can rest by a longitudinal edge 26 on the four bearing flaps 13 extending in the inner space 6. In the embodiment shown, the inner package 102 is manufactured from a starch-based material such as Paperfoam®. Such a material is known from, for instance, international patent application WO 98/13184 or WO 96/30186, incorporated herein by reference. The inner  
30 package 102 has a relatively thin wall, for instance one or a few millimeters

thick and has a total height  $H_4$  which approximately corresponds to the distance  $H_3$  between the top edge 19 of the bearing flaps 13 and the upper longitudinal edge 20 of the outer package 1. In the inner package 101, a form cavity 27 is provided, in which a product 28 such as a phone can be placed. In the form cavity 27, an opening 29 has been provided, in which a finger can be inserted for lifting the inner package 102 from the outer package 1. The lower side 30 of the form cavity 27 and the longitudinal edge 26 are approximately in one plane, while the top side 31 of the inner package 102 and the top side 32 of the product 28 are also approximately in one plane, which plane is located at only a small distance from a plane defined by the longitudinal edges 20 so that, with the package 100 closed, the product 28 is confined in the form cavity 27 by the cover surface 21.

In the inner space 6 below the inner package 102 a space is provided in which accessories 33 have been packaged, schematically represented as rectangles.

When opening a package 100 according to the invention, by pivoting the cover 7 away, the product 28 in the inner package 102 comes to lie clear in an attractive manner. The accessories 33 are all neatly covered by the inner package 102 but can be reached in a simple manner by removing this.

As the inner package 102 has a relatively small height  $H_4$ , for its manufacture, particularly simple molds can be used with short run-through times for manufacture, relatively little material and moreover, these inner packages 102 take up relative little space when stored. As the outer package 1 is folded from blanks 101, these take up little space in folded out condition when stored. Due to the design of the blank, in particular the bearing flaps 13, when setting up the outer package, directly, bearing means for the inner package 102 are obtained. Moreover, as they rest on the bottom 2, a particularly rigid package is obtained which, furthermore, is dust tight. Use of starch-based materials for the inner package, such as Paperfoam®, further offers the advantage that a good protection against static charge is obtained.

The invention is not limited in any manner to the exemplary embodiment represented in the description and the drawing. Many variations thereon are possible within the framework of the invention as outlined by the claims.

5           For instance, the bearing flaps can also be provided in a different manner, for instance folded from the large sidewalls 3 or, optionally, be built up in part, folded from different longitudinal walls. Optionally, also, separate bearing parts can be folded in. Naturally, the inner package 102 can be  
10           manufactured from different materials, for instance by vacuum forming or from paper pulp. However, from an environmental and energetic point of view, this is less advantageous. The inner and outer package can be designed differently. For instance, the inner package can have a lower longitudinal edge 26 which is not in one plane, while the height of the different bearing flaps 13 can be adjusted thereto. Naturally, in the inner package 102, several form  
15           cavities 27 can be provided as well as, for instance, logos, product characteristics and the like, and decorations. It is particularly advantageous if the inner package 102 is self-bearing.

          These and many comparable variants are understood to fall within the framework of the invention as outlined by the claims.